



COUNTERMEASURE

Vol 27 10/06



Kill the CHILL

plus own the
EDGE

Composite Risk Management

pull-out posters

Army Ground Composite Risk Management Information

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on the web
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Countermeasure is published monthly by the U.S. Army Combat Readiness Center, Bldg 4905, 5th Avenue, Fort Rucker, AL 36362-5363. Information is for accident prevention purposes only and is specifically prohibited for use for punitive purposes or matters of liability, litigation, or competition. Address questions about content to DSN 558-1218 (334-255-1218). To submit information for publication, use FAX 334-255-9044 (Julie Shelley) or e-mail countermeasure@crc.army.mil. Address questions about distribution to DSN 558-2062 (334-255-2062). Visit our Web site at <https://crc.army.mil>.



from the Director of Army Safety

I'm Bill Forrester. On August 25, I assumed command of the U.S. Army Combat Readiness Center and the responsibilities as your Director of Army Safety. It is my distinct honor and privilege. The team at the USACRC is committed and passionate in doing whatever it takes to preserve our combat power.

Initial burst of my thoughts in my short time are in three areas.

1st - Individual.

We say the Army Safety Risk Management Information System is a winner. To date, there are five recorded deaths in the 1.3 million uses. Not only does the program give solid information to the user, it provides a built-in opportunity for the first-line supervisor to engage. This is a low-pain, high-gain initiative. So, what about the other 100-plus Soldiers that were killed and didn't use ASMSIS-2?

2nd - Unit.

The Army Readiness Assessment Program is a Web-based initiative that provides battalion-level commanders with data on their formation's readiness posture. Consider that units scoring in the bottom 25 percent are four times more likely than the top 25 percent to experience a Class A mishap, and the cost of lost equipment is 14 times greater than units scoring in the top 25 percent. The Army Readiness Assessment Program is big bang for the bucks, yet enrollments are soft and completions softer.

3rd - Army.

We say accidental deaths are down about 20 percent from last year's tally. Yet, we are still 250 percent above our directed goal when using fiscal 2002 as the baseline for a 50-percent reduction. We are not winning-yet-and there is clearly much work required.

So, what do we know?

We know our warriors live



Army Safety



and operate on the leading edge, but they should not be alone on the edge. Leaders must be there, engaged and accountable. Leaders must stay engaged. We must lead on the edge. There is no such thing as an anonymous leader. Leaders commit.

We know accountable leaders, engaged at the correct/appropriate echelon, immediately save lives and promote change in our Soldier's culture, instinct and intuition for our future. Consider that during the rise in motorcycle deaths this fiscal year, two-thirds of the 45 fatalities were sergeants and above. It is not just specialists that require or deserve engaged and accountable leaders.

We know that preliminary loss reports clearly reveal preventable mishaps where engaged leaders could have made a difference. Someone always knows . . . someone knows when a platoon member just bought a motorcycle but

never completed required training . . . someone knows when an aviator's reputation is to "cowboy" aircraft . . . someone knows when Soldiers routinely fail to buckle up when driving. Someone knows and should engage.

Our job as leaders and Soldiers: Engage. Engage at the lowest level. The tools are there and we only get the Soldiers we have now. There is no strategic reserve we can call up when the ones we have are DEAD. We know we "never leave a fallen comrade." Please let the USACRC know how we can improve to preserve, maintain and improve OUR Army. ★

***Leading on the edge
– Own the Edge.***

William H. Forrester
Brigadier General, USA
Commanding

Our job as leaders and Soldiers: Engage. Engage at the lowest level. The tools are there and we only get the Soldiers we have now.



KILL THE CHILL

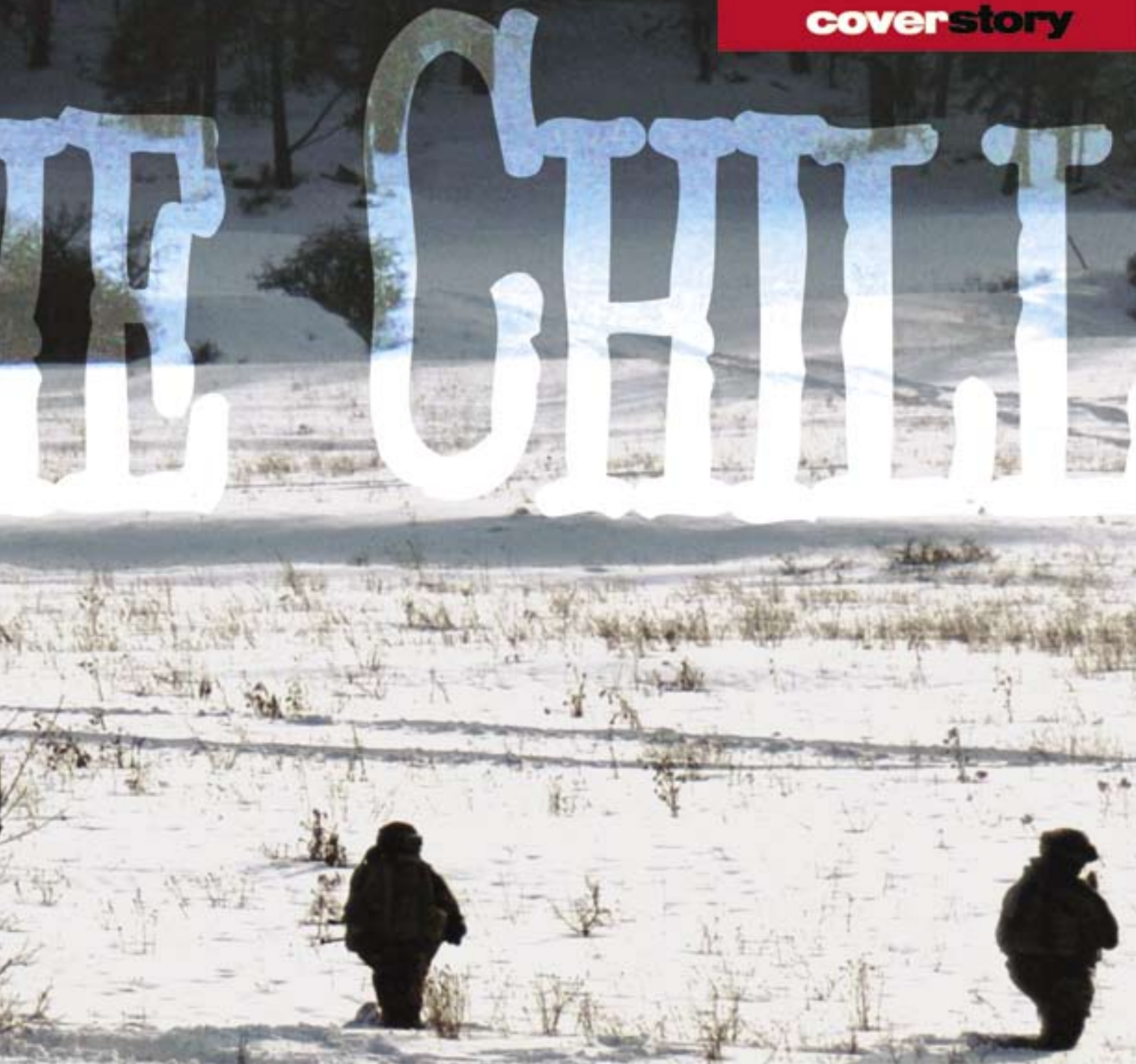
1 LT ERIK JOHNSON
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American military history is full of examples of just how devastating cold weather conditions can be to the health of Soldiers and the successful accomplishment of their missions. For example, in the winter of 1944-45 alone, U.S. forces in Europe evacuated 71,000 cold weather casualties. During the Korean War, cold injury struck our troops as fiercely as the Chinese Army. In fact, during the winter of 1950, one U.S. division lost one-third of its fielded strength to non-battle casualties, primarily frostbite and trench foot.

When my unit was deployed to Camp Bondsteel, Kosovo, we were in a more-or-less defensive posture. We patrolled but didn't attack, so we were in a static position, and our Soldiers were more susceptible to cold injuries than their counterparts in an attack posture. The reason is Soldiers in an attack posture have more

allowance for shelter and rest than those in a defensive state, who are always on guard and ready to act.

Because of this, we were particularly vulnerable to cold-weather injuries, but our leadership knew we couldn't afford to lose our strength to such injuries or accidents. Our commanding general at the time, BG Tod



Carmony, had a simple rule that, however brief, conveyed an important message: "Don't do stupid!" Therefore, leadership established a prevention program focused on education and training for cold-weather operations. Here are a few things we learned about cold-weather during our Kosovo deployment.

There are several elements unique to the profession of arms that put Soldiers at increased risk for cold injury, including clothing and equipment requirements, fatigue, intense physical activity, super-normal nutritional requirements, and a never-ending need for current training. As leaders, we must give due

consideration to the sometimes difficult circumstances of our lower ranks. It's the corporal who finds himself out in the cold on patrol or setting pickets, not the commander. These Soldiers are most susceptible to cold injury due to the nature of their work, so it's imperative prevention training should be focused on them first.

Clothing

Almost without fail, Soldiers who suffer a cold-weather injury aren't dressed properly. Sometimes Soldiers don't wear the right gear, and other times that gear simply isn't available to them, such as when the temperature suddenly fluctuates downward. All Soldiers must be issued the full complement of cold-weather gear, including insulated boots, gloves and a field jacket liner.

Soldiering is a physically demanding job, and intense physical exertion results in a loss of body heat through perspiration. Clothing dampened by sweat or environmental elements such as sleet or rain provides no insulation against the cold and actually increases the risk of injury. Once a Soldier's clothing becomes drenched in sweat, the layers stick together and prohibit warm air from being trapped between them.

Soldiers must dress as lightly as possible for the conditions to reduce the hazard of excessive perspiration and subsequent chilling. Clothing should be worn loose and in layers so it can be vented at the neck. Garments and footgear that fit too tight restrict circulation and reduce insulation and ventilation in the covered areas, providing an environment ripe for cold injury. Also remember the human head loses heat faster than any other body part, so headgear is especially important, as is proper footgear and gloves.

Nutrition and hydration

Heat may flow from a Soldier's body at a rate equal to or greater than the rate at which it is produced. An

average-sized male generates 100 watts of heat lying still and up to 1,000 watts during moderate work. When heat loss exceeds production, the body uses the heat stored in tissue, causing a rapid drop in overall body temperature—especially in the extremities. This is when you start shivering, which is the body's "emergency procedure" to produce heat and warn you that you need additional clothing or exercise, food or warmth.

Good nutrition is essential because it provides the body with fuel to produce heat. The number of calories needed to maintain normal bodily function generally increases as the weather gets colder. However, adequately clothed and protected Soldiers in cold climates don't require

more than the usual ration of 3,600 to 4,600 calories they're provided every day in MREs or DFAC meals.

We can't forget one of the most important aspects of the battle against cold injury—hydration. People generally minimize their activity in cold weather and even eat and drink less simply because they want to stay warm. However, adequate hydration and nutrition are vital to staying healthy in cold weather.

Leaders can help their Soldiers stay hydrated by providing them with liquids they'll actually drink. Lukewarm drinks with some flavoring are more palatable than icy cold, tasteless drinks in the winter. Leaders should remember excess coffee, tea, hot chocolate and soda can actually increase fluid output and lead to dehydration.

“It's never too soon to **begin preparing** for cold weather, so consult your local **safety officer** for advice on how you can **beat the chill** this winter.”

Mission considerations

One of the most fundamental elements of wintertime mission planning is ensuring all Soldiers know how to prevent, detect and give first aid for cold-weather injuries. Soldiers also must maintain behavioral discipline for any mission plan to have a real chance at success. It goes without saying that Soldiers must never drink alcohol just before or during operations. But in cold weather, the same goes for tobacco products. The nicotine in cigarettes and chewing tobacco constricts the blood vessels that circulate nutrients and heat throughout the body, especially in the extremities.


This might seem an obvious point, but always remember to use weather data when planning missions in the winter. Properly clothed personnel are in little danger of suffering a cold injury when the ambient temperature

remains between 40 and minus 15 F. However, when a 15-mph wind meets a minus 15 F ambient temperature, what the body actually feels is a temperature of minus 40 F. This phenomenon is called wind chill. In other words, human flesh suffers the same harm at minus 15 F with a 15-mph wind as it does at a temperature of minus 40 F with no wind.

Granted, many of our current operational locations never see temperatures below freezing, but think about it like this. Most people can stand around in 40 F weather wearing regular clothing and not be affected adversely. However, if you add a 15-mph wind, the surface temperature of their flesh is now freezing, making them susceptible to cold injury. Knowing what

the weather hazards will be allows for more informed and effective mission planning. You can't change the weather, but you can be prepared for it.

Conclusion

Our Army has been learning the lessons of cold-weather operations since the encampment of revolutionary forces at Valley Forge, Pa., in December 1777. That's 229 years of experience, and we don't need to relearn those lessons the hard way. It's never too soon to begin preparing for cold weather, so consult your local safety officer for advice on how you can beat the chill this winter. Best of luck and, better yet, best of training in preparation for the cold-weather season! 

Contact the author by e-mail at erik.n.johnson@us.army.mil.

DID YOU KNOW?

The average monthly temperature for Baghdad, Iraq, varies from 63 F in November to 48 F in January. Head further north to Mosul, and you'll find average temperatures ranging from 57 F in November to 44 F in January. Soldiers in Kabul, Afghanistan, face much cooler temperatures: 43 F in November and 28 F in January. In Kosovo, Soldiers can expect average low temperatures of 33 F in November, falling to 22 F in January.





Get Help Now!

The following cold injuries require immediate medical attention, so don't delay if you or your buddy exhibits any of the following symptoms:

Hypothermia

Shivering, an altered sense of consciousness and uncoordinated movements. Hypothermia can be fatal if treatment is not given immediately.

Carbon monoxide poisoning

Flu-like symptoms including fatigue, drowsiness and headache. Affected individuals also might become confused and develop blurred vision. Carbon monoxide is odorless, colorless and tasteless. Suspected carbon monoxide victims must be moved to fresh air and given medical attention immediately.

Frostbite

Loss of feeling or a tingling sensation in the affected area along with white, gray, red, yellow or waxy-looking skin. The frozen tissue will feel solid to the touch.

Trench foot

Numbness in the feet accompanied by burning sensations and shooting pain. Severely affected tissue will appear pale and slightly blue. Trench foot can lead to gangrene.

Chilblain

Reddened, slightly swollen skin accompanied by a prickly or burning sensation. Left untreated, chilblain can lead to more severe cold injuries.



Great Flying Stoves!

MSG (RET) RONALD ANDREE
Installation Safety Office
Fort Richardson, Alaska

Have you ever deliberately put yourself in a situation you didn't think you'd get out of alive, only to survive and vow never to do the same thing again? If so, you're not alone. I'm lucky I'm alive and well after all the stupid stuff I've done. Playing football on a semi-thawed lake, passing traffic uphill in a no-passing zone, driving drunk and boating in a lightning storm—none of these are sound decisions, but I've done them all. When you're young, it's hard to distinguish risk from what we perceive as adventure.

Fortunately, most of us learn from our mistakes and live long, productive lives. I, however, didn't grow out of my irresponsible behavior until well into my Army career. There's one particular act of stupidity I remember well that should've left me dead or at least grievously injured, and I'll start my story by saying it's never cold enough to risk getting blown to bits starting a stove.

Our artillery battery was conducting a field training exercise one January in Fort Campbell, Ky. We'd been in the field about a week, and everyone was numb from the cold and rain. We erected a warming tent for the unit to move through, and we'd assembled an old potbelly stove to heat the tent. There was one problem, though; the stove was missing the inner components that allowed it to burn diesel fuel. Undeterred, we gathered some wood from outside and crammed it into the stove, but the wet timber wouldn't ignite.


I took it upon myself to find something, anything that would light the wood, and what better place to look than the gun line? This line of thinking took me to the point where stupidity overtook common sense. At the gun line, I found a powder pit and grabbed the most volatile propellant there, a charge 7. The charge 7 is a semi-fixed ammunition propellant containing seven separate charges connected by a thin acrylic cord. When ignited collectively, the charges can hurl a 33-pound projectile about 11,000 meters.

When I got back to the tent, I threw the propellant into the stove, closed the lid and vented the bottom wide enough to accommodate a lighted match. Before "blastoff," everyone but me evacuated the tent, and I was holding the matches. I heard somebody say, "This is the stupidest thing I've ever seen." By then I didn't care if anybody got warm or not—I simply

wanted to see what would happen.

I found out a few seconds later. Me, the stove and tongues of flame leapt into the night as the charge exploded. The intense heat from the blast melted the tent lining, and I lay smoldering on the ground. My buddies were laughing hysterically and, although somewhat stunned and shaken, I joined them. Somehow, I was alive!

Since then I've often asked myself, "What the hell was I thinking?" I'd been in the Army for more than 10 years. I was supposed to set a good example for the young Soldiers in our unit, but I nearly wound up being a warning poster instead. Additionally, I performed every act that night in front of my chain of command. While they didn't give me verbal permission to use the charge in the stove, they didn't stop me either, and I interpreted their silence as consent. They were the first ones to leave the tent before I went into action, and nobody ever held me accountable for the damage to the tent and stove.

Today's Army places much more emphasis on safety than the Army I retired from several years ago. Our Soldiers face the lethality of combat under the privileged tradition of duty, honor and country, consciously going into battle knowing they might make the ultimate sacrifice. But it doesn't have to be that way in training and everyday activities. We can step back and make smart decisions, which is the beauty of Composite Risk Management. Even in combat, Soldiers of all ranks have the authority to stop unsafe acts and implement controls to ensure everyone makes it home from the fight. Please take advantage of this great tool and apply it to everything you do, especially if you see some idiot pulling charges out of a powder pit! 

Contact the author by e-mail at ronald.bruce.andree@us.army.mil.

Working in cold weather is a fact of life for Soldiers. At some point, nearly every Soldier will be shivering in a tent somewhere in the world.

And, as surely as winter comes, Soldiers will choose to heat their tents by means of a space heater, stove or other heating device.

**TURN U
THE HE**

JULIE SHELLEY
Managing Editor

UP AT

Heat on a cold winter night provides many advantages for Soldiers. One major benefit is that Soldiers lose less body heat and conserve more energy while sleeping in a warm environment, potentially improving their performance the next day. Despite the advantages inherent with the use of heating devices, they also pose some unique hazards—especially concerning fire and carbon monoxide poisoning.

Fire can engulf a tent in 10 seconds and destroy it in 60 seconds, giving Soldiers very little time to react. Conversely, carbon monoxide is odorless, colorless and tasteless and can quickly kill Soldiers while they're sleeping. It's released when fuels are burned inefficiently. In fact, most people killed in house fires die from carbon monoxide poisoning before they're burned.

Commercial off-the-shelf heaters and stoves might seem to be a good solution for heating problems in the field, but the fact is none have been approved for Soldier use for a variety of reasons. For example, unflued or unvented (i.e., no smokestack) COTS heaters vent exhaust fumes, including carbon monoxide, directly into living spaces. In addition, no COTS heaters on the market meet Army requirements for field environments. Standard military heaters, on the other hand, are designed to vent combustion fumes to the outside, are tested for safe field use and should be used instead of COTS heaters.



YOU MIGHT NEED TO KN

The following heaters are approved for Army use:

H-45 (NSN 4520-01-329-3451)

The H-45, or Space Heater Medium, replaces the old potbelly M-1941. The H-45 burns liquid and solid fuels and is designed to heat General Purpose, Tent Extendable Modular Personnel, and Tactical Operations Center tents. It has an output capacity of 45,000 BTU.

Space Heater Arctic (NSN 4520-01-444-2375)

This heater replaces the gasoline-burning M-1950 Yukon heater and is a lightweight, portable heater for five- and 10-man arctic tents. It burns liquid and solid fuels and has an output of 25,000 BTU.

Space Heater Small (NSN 4520-01-478-9207)

This heater has an output capacity of 12,000 BTU and is ideal for use in smaller tents such as the four-man Soldier Crew Tent. It burns liquid fuel and has a built-in tank, so no fuel can or stand is needed.

Space Heater Convective (NSN 4520-01-431-8927)

This heater provides forced hot air for tents and shelters. It generates its own power, recharges its battery and has an output of 35,000 BTU.

Thermoelectric Fan (NSN 4520-01-457-2790)

The Thermoelectric Fan is a compact, self-powered unit that fits on top of any military tent heater. It uses heat to turn the fan blades, which circulate heated air, improve comfort and save fuel.

Released in fall 2005 by the Army Communications-Electronics Command, Safety of Use Message 05-01 is still in effect for certain devices Soldiers might use to keep warm this winter. The SOUM concerns Field Deployable Environmental Control Unit models FDECU-2, FDECU-3, FDECU-4, and FDECU-5 (NSN 4120-01-449-0459/LIN A26852).

The FDECU provides cooled or heated air in various portable shelters and tents. However, a few Soldiers have suffered smoke inhalation when the heater assembly (P/N 9454066, NSN



OW...

4520-01-494-3852) overheated and filled their tent with smoke. Worn wiring insulation is believed to have caused the overheating.

Unit maintainers must inspect the heater assembly annually. Now is an excellent time to complete this inspection since winter is approaching quickly. Follow the procedures in item 6, table 4-1 of the Unit Preventive Maintenance Checks and Services in Technical Manual 9-4120-411-14.

To read the complete SOUM, go to the Army Electronic Product Support

Web site at <https://aeps2.ria.army.mil/commodity/soum/cecom/05/csoum05-01.html>. If you have any additional questions contact Steven Chan, CECOM Directorate for Safety, at DSN 987-7473 or (732) 427-7473; or William Pardy, CECOM Logistics Readiness Center, at DSN 992-4256 or (732) 532-4256.



To keep Soldiers both warm and safe this winter and in all cold-weather environments, follow these tips:

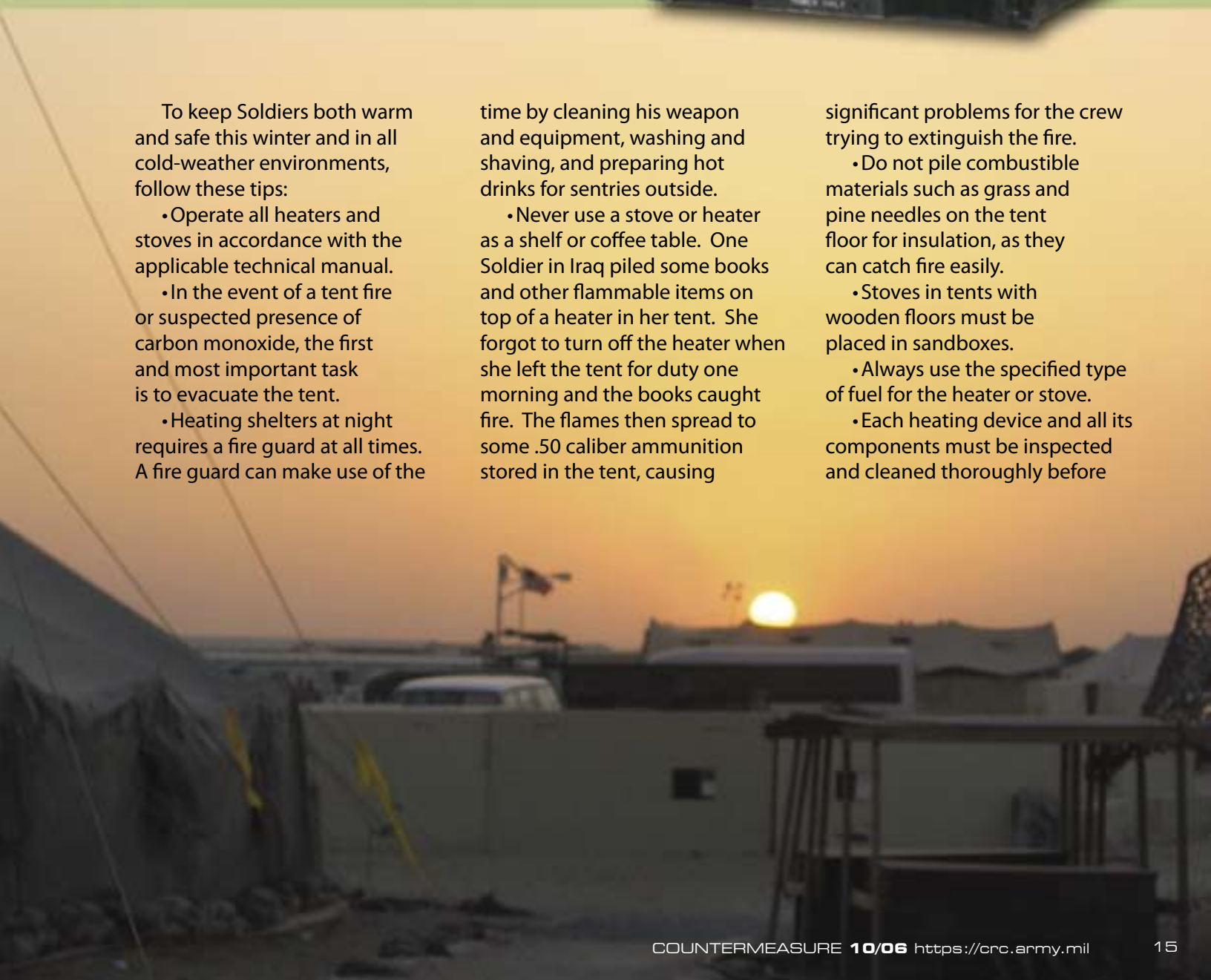
- Operate all heaters and stoves in accordance with the applicable technical manual.
- In the event of a tent fire or suspected presence of carbon monoxide, the first and most important task is to evacuate the tent.
- Heating shelters at night requires a fire guard at all times. A fire guard can make use of the

time by cleaning his weapon and equipment, washing and shaving, and preparing hot drinks for sentries outside.

- Never use a stove or heater as a shelf or coffee table. One Soldier in Iraq piled some books and other flammable items on top of a heater in her tent. She forgot to turn off the heater when she left the tent for duty one morning and the books caught fire. The flames then spread to some .50 caliber ammunition stored in the tent, causing

significant problems for the crew trying to extinguish the fire.

- Do not pile combustible materials such as grass and pine needles on the tent floor for insulation, as they can catch fire easily.
- Stoves in tents with wooden floors must be placed in sandboxes.
- Always use the specified type of fuel for the heater or stove.
- Each heating device and all its components must be inspected and cleaned thoroughly before



“ In any **dangerous** situation, the first response is to save Soldiers’ lives—Soldiers **lose their lives** in inches and seconds. In a tent fire or carbon monoxide incident, there are no seconds to **spare.** ”



storage and use. Special attention should be paid to checking for leaking valves, holes in gas cans and proper assembly.

- Secure stovepipe opening covers with tie tapes so the covers won’t contact the stovepipe.
- Use enough stovepipe sections so one complete section is above the highest point of the tent. Ensure the sections are vertical and do not contact any part of the tent.
- Be sure to leave enough space between the tent wall and the heater or stove. Heating devices situated too close to the tent wall can ignite the tent.
- If the flame is accidentally

extinguished, wait until the burner cools before relighting. An explosion could occur.

- Fuel should not be taken inside a tent warmed by fire. The fuel can for the heater must be located outside and as far from the tent as the fuel hose allows.
- Do not exchange the heater unit fuel can unless the heater is turned off.
- Do not smoke or drop cigarette butts around combustible materials or go to sleep with a lantern or candle burning.
- Do not open a stove or heater while it’s still hot, even after a flame-up has subsided. Fresh air will feed a fire and reignite it.
- Adding water to a gas fire will cause the fire to flame up and spread.
- Even in extreme cold, do not operate heaters at full capacity. An overheated stovepipe could ignite the

tent, and high temperatures can warp grates and damage other components.


- Provide sufficient ventilation for fresh air to enter the tent at all times.
- Ensure fire extinguishers are available in every tent that has a stove or heater and have a fire plan ready and rehearsed.
- Ensure emergency agencies such as fire departments and paramedics have access to all structures using heaters and other flame sources.
- Do not leave stoves or heaters unattended. As fuel levels decline, pressure drops and the drip valve must be readjusted to maintain the proper flame.
- When lighting a heater or stove, always turn your face away from the chamber door. If a flash occurs, it most likely will happen when the fuel first ignites.



- Keep stoves clean and always practice safety when doing so. Hitting a stovepipe and pouring in a little water to clean out soot is extremely dangerous; throwing blanks into a burning stove to clean out carbon buildup in the stovepipe is even worse.

- Do not touch metal parts of heaters or stoves when temperatures are below freezing without protective gloves. Skin may freeze upon contact and cleave from the flesh.

- Use caution when handling sharp-edged pipes to avoid cuts.

In any dangerous situation, the first response is to save Soldiers' lives—Soldiers lose their lives in inches and seconds. In a tent fire or carbon monoxide incident, there are no seconds to spare. Use the right equipment and stay ready for the fight! 

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Original or Extra Crispy?

MIKE GALLAGHER
Tactical Safety Specialist
Marine Corps Air Station New River, N.C.

I'm the fire chief of the local volunteer fire department in my hometown. Most of the calls we receive are either false alarms or routine small fires that don't do a lot of structural damage. But we recently responded to a structure fire with "flames showing," which means a working fire is in progress. As we arrived at an expensive, gated subdivision, it wasn't hard to spot the flames leaping from the side of a two-story house.


Our firefighters quickly attacked the blaze from inside the house and had the fire extinguished within a matter of minutes. Fortunately, the structure didn't burn to the ground, but it was heavily damaged on one side of the first floor. The home's somewhat stunned occupant then told us the events leading to the fire, and I couldn't help but ask myself, "What was this guy thinking?"

A young Marine lieutenant was renting the house during his assignment at the nearby Marine Corps air station. Sometime the week before the fire, the lieutenant was issued a small, multi-fuel stove to use during field exercises. He wanted to test the stove's capabilities before going to the field, though, and decided the bathtub on the ground level was as good a place as any to fire it up.

The lieutenant filled the stove with fuel and, using the pressure valve, pumped it to what he thought was a suitable level for lighting. The stove, however, wouldn't ignite. Becoming frustrated, he applied more pressure to the stove via the valve,

but fuel unexpectedly began spewing into the bathtub. It was then the stove finally ignited, but not in the way the lieutenant desired or expected. The spilled fuel in the bathtub burst into flames and spread to the gallon can he'd stored the fuel in, which promptly erupted into a small fireball. Although the lieutenant tried to extinguish the flames, the fire quickly grew out of his control and he was forced to call 911.

Why would this young officer do such a seemingly foolish thing? He never gave us a reasonable explanation as to why he lit the stove in the bathtub and not in the yard or on the concrete driveway, where damage would've been minimal. He did say he never thought something like this would happen to him because "fires only happen to other people." More than \$69,000 in house repairs later, however, the lieutenant now knows the other guy can become you in a hurry. Did I mention he didn't have renters' insurance?

The lieutenant was lucky the house wasn't a total loss and nobody was hurt during his experiment with the stove. He's also fortunate it didn't happen in a tent during a field exercise or in combat operations in theater, considering how fast tents burn. Always follow the -10 for your heaters and stoves and respect basic safety precautions to ensure fires don't happen to you. 

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DEAD

BATTLE

CW3 DAVID MUEHLEISEN
U.S. Army Combat Readiness Center

As this past Labor Day weekend came and went, I was reminded cooler days and much colder nights aren't too far in the future. We've already discussed the effects of cold weather on Soldiers in this issue of *Countermeasure*, but it's important to remember our equipment and vehicles are also susceptible to the chill of winter. Combined with a lack of vehicle battery maintenance, cold weather has a way of bringing out borderline batteries that worked fine in the summer but suddenly don't have the cold cranking amps required for a wintry-morning start. As such, there's no better time than now to prepare your unit's vehicle batteries for

the cold months ahead.

The battery industry uses the CCA rating to gage a battery's ability to start an engine in cold temperatures. Say we have a new, fully charged 12-volt battery. Its rating is the number of amps the battery can deliver at zero degrees F for 30 seconds while maintaining a voltage of at least 7.2 volts. The higher the CCA rating, the greater the battery's starting power. So what exactly will provide good CCA in a lead acid battery? These type batteries are made of plates, lead and lead oxide and contain electrolyte, a 35-percent sulfuric acid and 65-percent water solution that causes a chemical reaction to produce electrons.

Proper fluid levels are

essential in keeping lead acid batteries serviceable, so regular maintenance and fluid checks are a must. Fluid should be replaced using only mineral-free water, and distilled water is best. Never overfill battery cells—the electrolyte ideally should touch the bottom of the vent splash band. Once filled, test the battery with a hydrometer to measure the amount of sulfuric acid in the electrolyte. A low reading means the chemistry that makes electrons is low, and if the hydrometer indicates 1.20 of specific gravity or less in a single cell, you should recharge or replace that battery.

Many battery problems are caused by dirty or loose connections. Batteries

should be cleaned regularly with a solution of two tablespoons baking soda per pint of water. Also remember to clean and tighten the cable connections. You can prevent corrosion by using a small bead of Grease, Automotive and Aircraft on clamp and cable ends and by placing a felt battery washer (NIIN 011014147) at the base of the posts.

You must think safety when working with or around batteries. Be sure to remove any jewelry such as wedding rings and ID tags when you enter the maintenance shop. You don't want to lose a finger or have your ID tags melt into your neck while you're wearing them. This is also a time to use the personal

Winter Weapons Handling

SFC (RET) JAMES ROONEY
U.S. Army Mountain Warfare School, Jericho, VT.



Cold temperatures can greatly affect the maintenance, functioning and employment of infantry weapons. To properly handle and care for your weapon under a variety of adverse conditions, you must take temperature into consideration. Your weapon is only as good as your maintenance, and this is especially true when the mercury falls below freezing.


Never let condensation form on your weapon. Condensation, often referred to as "sweating," forms on weapons when they're taken from extreme cold into any type of

heated shelter. The moisture freezes when you leave the heated area and internal parts might freeze together, causing stoppages. For this reason, it's best to leave weapons outside during freezing temperatures.

When left outside, weapons should be readily accessible, guarded and sheltered where ice and snow will not get into the working parts, sights or barrel. Because the condensation process will continue for about an hour after a weapon is taken inside a warm shelter, wait until the sweating stops before cleaning. Once you're inside the shelter,

READY?

protective equipment found on the safety board or in the unit tool room. Every mechanic should wear steel-toed safety shoes during battery maintenance, especially when removing batteries from equipment. Chemical protective goggles or a safety face shield protect the eyes and face from splashing electrolyte and bits of corrosion, and rubber gloves protect the skin from sulfuric acid. A rubber apron is an essential part of PPE because battery acid can destroy the Army Combat Uniform. Additionally, a metal fume respirator is a good idea if you're working in a battery shop that produces harmful fumes.

The Army spends millions of dollars every month replacing Class IX vehicle batteries. But with a little attention and proper maintenance, you can be sure your vehicles will start when and where you need them, regardless the temperature outside. Combined with the use of PPE, both you and your equipment will stay fully mission capable for a long time to come. 

Contact the author by e-mail at dmuehleisen@us.army.mil.

FIVE TIPS FOR A HEALTHY BATTERY

- Clean and tighten terminals and clamps
- Ensure battery is securely mounted to the battery tray
- Fill battery to appropriate levels
- Vent holes open for gas emission
- Always use proper PPE



keep your weapon near the floor to minimize condensation. In addition, keeping the interior of the shelter close to 32 F will minimize condensation.


Once you move back into the cold, operate your weapon manually by pulling the charging handle to prevent the internal parts from freezing. Charge the handle several times during the first five minutes after leaving a warm shelter. But make sure you don't inadvertently load the weapon and have a negligent discharge!

When you clean your weapon, completely strip it and use a non-residue solvent to remove all lubricants and rust-prevention compounds. Once it's clean,

use a lubricant that won't thicken and cause the weapon to operate sluggishly or jam. Use Lubricant, Arctic Weapon rather than BreakFree CLP in all weapons except the M249 squad automatic weapon and M2 .50 caliber machine gun. Remember to use lubricants sparingly.

Another consideration is your battle-sight zero. You should battle-sight zero your weapon in the area where you're going to use it. Temperature, elevation and atmospheric pressure all affect where the round hits and how the weapon operates. A common error is to battle-sight zero your weapon at home station and then deploy to a different area, where you'll wonder why your weapon

isn't shooting to the point of aim. If you want to accurately engage your enemy with precision, battle-sight zero your weapon in your area of operation.

These are only a few of the things you need to consider when operating your weapon in a cold climate. We will continue to operate in cold-weather environments worldwide, and we must be able to maintain our weapons in any climate. Including the basic lessons in this article in your pre-deployment training plan will help ensure you and your Soldiers are battle ready! 

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**Class A**

■ Soldier died one week after the M1114 HMMWV he was riding in rolled over into a canal. The HMMWV fell into the canal after the road it was traveling on gave way beneath the vehicle. Two other Soldiers in the HMMWV suffered injuries associated with near drowning. The deceased Soldier was serving as the vehicle commander. The accident occurred during the late afternoon.

■ Two National Guard civilians were killed when the GSA pickup truck they were riding in rolled over several times on an interstate highway. The civilians were in the truck's backseat and were not wearing seat belts. One civilian was thrown from the vehicle, and the other was pinned inside. Two Soldiers, the driver and front passenger, were wearing their seat belts and suffered minor injuries. The driver lost control of the truck after falling asleep at the wheel. The accident occurred during the mid-morning.

Class B

■ Soldier suffered a permanent total disability when the FMTV she was riding in rear-ended a HEMTT fuel tanker. The vehicles were part of a seven-vehicle convoy during a range training movement. The driver of the FMTV was not injured. The accident occurred during the late morning.

Class C

■ Soldier suffered a concussion injury when the five-ton wrecker he was driving rolled over and struck a tree.



The vehicle was traveling on a civilian two-lane road and the driver steered it toward the shoulder to allow clearance with oncoming traffic. The rear passenger tires slid off the roadway, causing the driver to lose control of the truck. The wrecker overturned several times before hitting the tree. Speed was not a factor, but the driver was not wearing his seat belt or helmet. The accident occurred during the late afternoon.



Class A

■ Soldier collapsed and died during physical training. He was pronounced dead at a local hospital. The accident occurred during the mid-morning.

■ Soldier suffered a fatal gunshot wound to his torso during a live fire training iteration. The 5.56 mm round was fired from an M4 being handled by another

Soldier. Neither Soldier was wearing their personal protective equipment. The accident occurred during the mid-morning.

Class B

■ Soldier's finger was amputated to the knuckle as he was climbing down from a two-and-a-half ton truck. The Soldier grabbed one of the vehicle's mirrors as he was moving down and caught his wedding band on a screw protruding from the mirror. The accident occurred during the mid-afternoon.

■ Soldier's finger was amputated to the base of the hand after an accident on an LMTV. The Soldier was dismounting the LMTV following maintenance and caught her finger on an unknown object. The accident occurred during the late morning.

■ Soldier's finger was amputated to the first joint after his wedding ring caught on a protruding object on a

Seat Belt Success Stories

Spotlighting Soldiers who wore their seat belts and walked away from potentially catastrophic accidents

Class D

■ Soldier was uninjured when the M998 HMMWV he was driving rolled over during a 22-vehicle convoy. The Soldier and other crews were returning the vehicles to the unit motor pool following a field training exercise. The driver overcorrected the HMMWV after its right wheels drifted off the roadway, causing the vehicle to roll over. The Soldier was wearing his seat belt and PPE. The accident occurred during the mid-morning.

■ A HMMWV crew was unharmed when their vehicle struck another HMMWV during a combat patrol. The accident HMMWV's driver fell asleep at the wheel after having been on duty for nine hours. The vehicle commander yelled at the driver in an attempt to wake him but couldn't in time to avoid the impact. The crew was wearing their seat belts and PPE. The accident occurred during the early morning.

■ Soldier escaped injury when the forklift he was driving rolled down a steep incline and struck a HEMTT and five-ton truck. The Soldier was attempting to remove a tarp from the back of another truck and couldn't see the incline. He was wearing his seat belt and PPE. The accident occurred during the mid-morning.



Class A

■ Soldier was killed when the M1114 HMMWV he was riding in rolled over while maneuvering across a river levee. The Soldier was serving as the vehicle's gunner. Injuries to other crewmembers were not reported. The accident occurred during the mid-afternoon.

Paladin. The Soldier was dismounting the Paladin and lost his balance after the ring snagged the unknown object. The accident occurred during the mid-morning.

Class C

■ Soldier suffered a gunshot wound to his foot while attempting to clear his 9 mm weapon. The Soldier was reporting to duty at a worksite when he noticed the magazine was still in the weapon. The Soldier decided to clear the weapon but didn't remove the magazine. Instead, he moved the chamber slide back, visually inspected it, and released the slide, at which time one round entered the chamber

from the magazine. The round fired and hit the Soldier's toes when he pulled the trigger. The Soldier was hospitalized for one day, lost two workdays and was on restricted duty for two weeks. The accident occurred during the late afternoon.

■ Soldier suffered heat exhaustion injuries after a day of extended outdoor training. The Soldier was hospitalized for a week. The accident occurred during the early evening.

WHAT THINK

OOPS, THAT'S GLASS...

Have you ever seen a bird fly repeatedly into the glass of a windowpane or door? Try as they might, the birds will never make it through the glass—they're just too small. Humans, on the other hand, are big enough to crash through glass when and if they want to, like in a bar fight scene in the movies. Although far from the glitz of Hollywood, one Soldier in Iraq had a camera-ready moment while leaving his battery command post late one evening. Instead of using the handle to open the door, the Soldier put his hand on the glass pane and pushed the door open. He must've pushed too hard, because the door didn't budge, the glass shattered, and the Soldier's arm went through the door, followed by the rest of his body. The Soldier's injuries required him to spend two months in the hospital, six months away from work, and a year on restricted duty. The other Soldiers in the unit received remedial training on the proper use of door handles. Needless to say, the door won.



WERE THEY WAG?


OW, THAT'S WOOD...

You have to feel sorry for the poor guy that's tasked with "conducting barracks beautification" (yes, that's a direct quote from the accident report), which for one Soldier meant scrubbing down the communal shower room. It was late one morning and getting close to lunchtime. The report was scant on details, but this we know:

While cleaning the shower, the Soldier slipped, fell and hit his jaw against a wooden bench. In fact, the Soldier hit the bench so hard he was hospitalized for a week and lost six workdays due to various jaw fractures. The bench apparently was unharmed in the incident. Had the Soldier been wearing non-skid shoes, he probably would've been ok too.

AND FINALLY... OUCH, THAT'S FIRE!

Two Soldiers had just changed the fuel filter on a five-ton truck and were in a quandary. They needed to prime the truck's engine, but the clear plastic tube that ran the primer pump had been removed and capped off. The Soldiers, along with their battalion motor sergeant, decided restoring the fuel system to its original condition would take too long and interfere with mission requirements. Their alternate course of action consisted of priming the truck

using a technique known as "gas ragging," a process that requires an uninterrupted chain of events to forestall disaster. This day, however, there was a kink in the chain. As one Soldier held the gas-soaked rag in the engine's air intake system, the other Soldier turned the engine to ignite the fumes, a sequence of events that was supposed to end with the engine cranking. But when the engine backfired, the Soldiers' plan literally went up in smoke. The fumes ignited and sparked a fire in the rag the Soldier was holding, which quickly spread to his uniform and the five-gallon gas can used to douse the rag. At the end of the ordeal, the Soldier that cranked the truck suffered only minor burns, but the Soldier holding the rag suffered second- and third-degree burns over 30 percent of his body. That's a pretty serious outcome for a "field expedient" method that was supposed to save time. 

POV stats

FY06
through June 06

113

total DEATHS

Class A-C accidents/Soldiers killed

■ Cars	129/47
■ Vans	0/0
■ Trucks	53/18
■ Motorcycles	130/45
■ Other*	13/3

*Includes tractor-trailers, unknown POVs, mopeds, ATVs, and bicycles

FY05: **126** 3-year average: **114**

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